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FLAX IN BELGIUM

Foreign Agriculture

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FRONT COVER

Flax in Belgium

Retted flax drying on the banks of the so-called Golden River of Lys in Belgium.

BACK COVER

Belgium's Flax-Producing Areas

Most of Belgium's flax comes from the Walloon provinces and from East and West Flanders, where it has been principal crop for a thousand years.

NEWS NOTES

Indian Extension Directors To Tour United States

Twenty-five newly appointed directors of agricultural extension in India will visit the United States this fall under the auspices of the Ford Foundation to see this country's agricultural extension programs in action.

The directors, who represent various sections of India corresponding to our States, are the key figures in India's new extension program, which is getting heavy support from the Point Four program there and the Ford Foundation.

Although the Foundation is paying the visitors' expenses, their training program will be under the direction of the Office of Foreign Agricultural Relations. John Hull of Patoka, Ind., will be technical consultant for the group.

Arriving August 18, the Indians will stop in Washington and go on to study State and county extension programs in Tennessee, Alabama, Missouri, New Mexico, Arizona, and California. After discussions with Foundation officials in Pasadena, the visitors will stop in Japan before returning to India.

Ladejinsky Honored

Wolf I. Ladejinsky, Agricultural Attaché at the American Embassy, Tokyo, recently received a silver plaque from the Japanese Government in recognition of the important part he played in the development of the Japanese land reform program.

Kozen Hirokawa, Minister of Agriculture and Forestry, who presented the plaque, described the land reform program as "the most significant reform which Japan accomplished during the Occupation."

Mr. Ladejinsky is internationally known as a specialist in land tenure problems. He formerly was head of the Far East Division of the Office of Foreign Agricultural Relations.

Credit for photos is given as follows: p. 128, Belgian Government Information Center; p. 129, Horace Porter; pp. 131, 133, R. Clements Lyttle Studios, Belfast; p. 137, Mrs. Pauline McD. Michael; pp. 142-143, Graham Quate; p. 144, Irish Tourist Association, Dublin; p. 146, Dublin Chamber of Commerce Journal.

FOREIGN AGRICULTURE ALICE FRAY NELSON, EDITOR

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From Belgian Flax to Irish Linen

By ROBERT N. ANDERSON and ELWYN F. CHASE, Jr.

Linen has been one of mankind's favorite fabrics since history began. Today there are several fine and famous linens in the world, but none has a reputation greater than that of the so-called Irish linen. We cannot here discuss all fine linens but it is interesting to consider the cooperative endeavor that goes into the production of Irish linen. Actually, we would name it more precisely if we called it Belgian-Irish linen because it is, for the greater part, the joint handiwork of two peoples—the Belgians and the Irish. The Belgians grow much of the flax and process it; the Irish spin the yarn and weave the fabric.

The practical result of the combined skill of Belgian farmers and Irish manufacturers is best seen from an examination of the position that Irish linen has gained in world markets. In an average year, Ulster manufacturers weave 120 million square yards. This cloth would cover an area of 40 square miles and last year brought the equivalent of $100 million. Only one-quarter of it is sold domestically; the rest is exported. The best foreign customer is the United States, which usually buys approximately 30 million square yards annually. The British Dominions and Latin America each take approximately one-fifth of the total production.

Belgian Flax

In Belgium the art of producing high-quality flax has been handed down from father to son for centuries. It was more than 1,200 years ago that the story of Belgian flax began, with an edict by Charlemagne that required every family in his realm to acquire the material and learn the art of processing and spinning flax.

At first, flax was produced only to meet the needs of the family, but, as the population increased and industry developed, processed flax was exchanged for other produce. Even taxes were paid in flax fiber and seed. A crossroad of the awakening European world the Flanders became a center of flax trade. By the time America was discovered, flax was being produced in most of the provinces that now go to make up Belgium, and fine flax linen was being exported to Italy, Britain, and France.

The soil and climate of Belgium and the density of the population, with extreme parcellation of the land, made flax production and processing a suitable industry for the country. And the legend of the Golden River of Lys—that retting in its water was responsible for the shiny, silken flax of Belgium—discouraged competition that might have come from Germany and France. Today, in these countries—and in many others—flax production is big business and, with the discovery of tank retting, the Golden River lost its exclusive claim as the ideal place for flax retting. Nevertheless, flax is still one of Belgium's important crops and its farmers produce some of the finest flax in the world.

United States farmers think of flax mainly in terms of flaxseed, but in Belgium flax is generally grown for fiber. It is one of the most profitable crops but it is also one of the most difficult to grow. It is susceptible to a great many diseases and insects and requires experience, proper crop rotation, well-prepared land, and plenty of fertilizer and hand labor. Good farmers will not sow flax on the same ground more than once every 7 years. Neither will they sow on land which has had beans, peas, or potatoes the year before. In the crop rotation, flax does best after a beet or grain crop, usually oats or wheat. Clover is often used 2 years ahead but not immediately preceding flax.

Flax is sown with a drill, in the spring, from mid-March to mid-April. Most Flemish farmers prefer seeds of the white flower type but in the Hesbaye area the blue flower types are popular and are said to give a better quality flax. As a rule, imported seeds are used, most of which come from the Netherlands.

It takes about 100 days to mature a crop of flax for fiber. The fields have a delicate chartreuse color in the early stages, then become a light green, later are tinted with small white or pale blue flowers, and at maturity take on a lacy green-gold richness. These fields provide additional color and variety to the patchwork-quilt effect of the Belgian landscape.

Mr. Anderson is Agricultural Attaché, American Embassy, Brussels, Belgium; Mr. Chase is American Vice Consul, American Consulate General, Belfast, Northern Ireland.



Harvesting flax in Belgium. Flax is generally pulled by machines in Belgium, tied into bundles, and set on the roots to dry.

Flemish farmers, preferring to take their own risks, do not sell their crop under contract to a processor early in the growing season as is customary in the Walloon part of the country. Last year, when textile prices were high, processors were offering contracts of $120 to $160 per acre, on the average. Farmers planted the largest area sown since before the war—84,500 acres, which represented an increase of almost 40 percent over the 1950 plantings. This year processors are offering only $80 to $120 an acre and plantings have dropped to roughly 75,000 acres.

Flax production in Belgium has varied widely over the past 30 years, reaching a high of 275,000 metric tons in 1940 and a low of 41,570 tons in 1942. Last year, because of the increased plantings, flax output was the largest since before the war, amounting to 203,432 metric tons. Yields per acre generally average about 2.5 metric tons, but in 1949, which was an exceptionally good year for most crops, average yield was 2.7 tons an acre.

Flax is usually harvested in Belgium before the stems completely lose their green color, for pulling at this stage makes for better fiber. Good quality flax has straight long straws of uniform thickness and of a golden-yellow color after drying. Processors prefer straw that is about 3 feet long with an average diameter of about one-sixteenth of an inch.

The harvesting of flax differs from that of other major crops in that flax is pulled rather than cut. The stems are tied into bundles, placed in neat hut-shaped shocks, and left to dry, standing on the roots to preserve as much of the fiber as possible. Until recently, flax was pulled by hand. Now, most of it is pulled by machines that are Belgian in origin and construction.

The flax-pulling machines have long pointed spreaders that run along the ground and push the flax into revolving adjacent rubber belts that pull it up. It is then gathered into bunches and tied into bundles. In 1951, there were 1,969 flax-pulling machines in Belgium.

After the flax has dried in the fields, it is hauled to a central point and placed in round stacks with cone-shaped tops of straw to shed the rain. In some areas in the Flanders the neat stacks with their straw hats can be seen all over the countryside. When flax is grown under contract, it is often taken directly from the fields to the processor's sheds. It remains in the stacks or the sheds until it is taken away for removal of the seeds, a process called rippling.

Rippling was once a hand process of beating and separating. But now the straw is run through a special type of threshing machine that strips off the seed bolls with large rotating claws. The bolls are then crushed and the seeds are sorted from the chaff. An average of about 220 pounds of seed are obtained from each ton of flax—about 10 percent of the total production by weight. Most of the seed

is used for making linseed oil; only a little is saved for planting.

After the seeds have been removed, the straw is put on a small platform, where it is sorted by hand to assure as much uniformity as possible in size and quality. Finally, it is again tied into bundles.

These bundles are ready for retting—to free the fiber from the woody part of the stem. Retting the straw for fiber is undoubtedly the most critical step in processing. Over-retting weakens the fiber; under-retting makes it coarse and harsh. No instrument has ever been devised for telling just when the retting has gone far enough. Knowledge of when this point has been reached is gained only by experience. It is knowledge like this, won and cherished by generations of Belgians, that is largely responsible for the enviable reputation that Belgian flax enjoys in Ireland and elsewhere.

Until retting in tanks was introduced a few years ago, it was done in the River Lys. The bundles of flax were placed on barges all along the river and, by weighting with stones, the barges were submerged just below the surface. Some say that the yellow cast of the flax-lined river was the reason for calling the Lys the Golden River. Others maintain that it derived its name from its legendary value as the ideal place for retting.

When flax was retted in the river, 2 to 3 weeks were required to release the fiber, and constant care and labor were necessary to shift the flax in the barges or change the weights to keep it in the proper position. Belgium's highest quality flax was double-retted—it was partly retted, dried, and put back into the water to complete the process. Sometimes, it was even retted a third time. Despite the fact that retting is now done in specially prepared tanks, the industry has not wholly turned its back on the Golden River; it has remained in the area and frequently uses river water in the tanks. Tank retting takes only 4 to 5 days. The water is heated to about 75° F. at the beginning and gradually brought up to about 90° after the second day.

During the retting period the fibers are loosened through bacterial action, which dissolves the pectic



Flemish wheels (left) provide the finishing touch in the scutching of the highest quality flax in Belgium. The fiber shown here has been partly cleaned by machine.

gum that binds them. When the fiber can be stripped from the inner woody core, the retting process is completed. After retting, the water is drained out of the tanks, the straw is rinsed, and the bundles of flax are removed and taken to an open field to dry. The cord around the bundles is taken off and the flax is set up in cone-shaped bunches with the root ends in a circle and the straw coming together at the top, which allows free movement of the air through the straw and exposes the maximum amount of straw to the bleaching action of the sun. It takes about 2 days to dry the flax in the fields, after which it is again tied into bundles and placed in a storage shed to await scutching. If the cones are large or the weather is bad, they are often turned inside out to facilitate drying.

Scutching is done simply by beating the retted straw to separate the fibers from the straw and clean them. Once, scutching was done by hand. Later, a wheel with pliable wooden blades, called the Flemish wheel, was introduced. This wheel is still used; it provides the finishing touch in the scutching of the highest quality flax. Some processors use it only as such a finishing touch, first partly cleaning the fiber by machine. Others processors use it altogether.

Today, scutching is mostly mechanized, but it still requires a great deal of hand labor, not only for the finest flax but for the "run of the mill" as well. A belt takes the retted straw into one end of a machine and delivers it at the other end as cleaned or partly cleaned fiber. As the scutched flax fiber passes out of the machine, workmen pick it up in bunches, smooth and comb it by hand, and give each bunch a twist to preserve its identity.

This fiber is known as line fiber. In the process of scutching—by hand or by machine—some short fibers are removed and some of the long fibers are broken. These fibers, with the woody material, fall away from the line flax and are later separated from the line and called tow. From pulled flax, farmers may obtain as much as 12 percent of scutched flax and 5 percent tow.

The careful grading and sorting of Belgian flax contributes greatly to its popularity.

There are more than 4,000 flax processors in Belgium, most of whom employ little or no labor; they and their families do the work or have some or all of it done on a custom basis. Only about 450 plants are completely equipped for retting and scutching.

Belgian farmers produce only a little more than half of the flax used by domestic processors. The other half comes from France and the Netherlands. Imports of flax straw during the past 25 years have fluctuated from more than 228,000 tons in 1928, entirely from France, to as low as 52,464 tons in 1944. The lowest imports since the war were in 1948, when French imports fell to 58,770 tons and only 84,328 metric tons in total were brought into the country.

Much of Belgium's scutched flax is used in its own textile mills, well known for their linen and lace. But great quantities of the flax are exported too. Last year Belgium shipped flax fiber to 27 different countries. One of them—the United Kingdom —took nearly half, much of which went into the making of Irish linen.

Irish Linen

In most years, two-thirds of the 20,000 tons of flax used by Ulster spinners comes from Belgium. They find that the Belgian product produces a consistently higher quality of linen yarn than flax grown in any other country. Irish flax, which supplies approximately one-quarter of consumption, is generally rated lower than the Belgian import. The rest of the flax used in Irish mills is raised in many different countries.

The method of buying flax varies widely. In Ireland, an association of spinners negotiates a price with Irish farmers and guarantees to buy the entire crop. In Belgium, on the other hand, there is a free market, and Irish spinners and flax brokers maintain offices in Courtrai in order to keep in constant touch with market conditions there.

The raw material that is bought in Courtrai and from Irish farmers comes in two forms—line fiber and scutching tow. From the high-quality line fiber the weaver will produce fine linens. From the tow remaining after the scutching process and after the first separation in the factory he will produce towels and other articles that do not require high-quality yarns.

With the line and tow fiber, the spinner is ready to start the complicated process of making yarn or thread. The first operation is known as hackling (combing for flax line and carding for flax tow). Hackling can be done either on a machine or by hand; in some cases, both methods are used. The long wisps of fiber are passed over a series of metal pins to eliminate bark, imperfect strands, and loose

ends. This process also makes the fibers parallel and separates the strands.

After the bundles of line fiber have been hackled, they are considerably smaller; the discarded material is in bins on the floor. This hackling process represents the second time that flax line has been separated from tow—it was first separated in the scutching process. The tow resulting from the hackling operations is called machine tow and is of a finer quality than the original rescutched tow. A bunch of flax line after hackling resembles a switch of blonde human hair about 3 feet long.

After hackling, the bunches are placed on a moving belt, with the end of one bunch overlapping the end of another. The bunches are then pressed between rollers and emerge in the form of a continuous wide strand, called a sliver. The problem now is to transform this inches-wide sliver into a thin yarn. The operation that performs this seeming miracle is called drafting and doubling.

Each sliver is first passed between two sets of rollers. The first set turns slowly—at about one-fifth the speed of the second, which is the drawing roll. When a sliver of flax is passed between the sets of rollers, it will come out at the rate of 5 feet for every 1 foot that went in. The sliver has been drawn out to five times its original length and is, consequently, five times thinner than it was. Since the sliver was not exactly uniform in width and thickness at the beginning of the operation, it can easily be imagined that the drawing process leaves the less bulky sections considerably weakened.



Irish linen damask taking shape in the loom.

Therefore, several slivers are combined so that the weak portions of one sliver can be reinforced by the thicker, heavier portions of another. This is known as doubling. The new sliver is then drawn, or drafted, once more. After slivers have been combined and drawn several times, they are many times their original length and more nearly resemble the yarn that is the final result of spinning.

One further step is necessary, however, before these slivers are ready for the rigors of the spinning frame. Each one now consists of many small fibers bunched together and lying parallel. It would not take much pressure to pull them apart. In order to strengthen the sliver, it is twisted slightly. This is done on a roving frame, which not only twists the sliver but also winds it into a large bobbin.

The rove, as the sliver is now called, is ready for spinning into yarn. The wet spinning process is the one generally used in Northern Ireland. It is called "wet" spinning because the rove is first passed through hot water, which softens the natural gums that are present in the flax fiber and makes it more pliable. Immediately after its hot bath, the rove is drawn out a final time. This operation is similar to the drafting previously described, i.e., the first set of rollers is moving more slowly than the second set. The rove is then twisted again, this time more vigorously, and is wound onto bobbins as yarn.

The adjective "wet" describes not only this spinning process, but also the spinners themselves and the whole spinning room. As the wet rove is twisted, water is thrown in every direction, and the floor is so covered with water that spinners are traditionally bare-footed. Even in mills equipped with modern, water-proofed machinery, one can see the spinners padding about on bare feet on completely dry floors, presumably in deference to the old ways.

The yarn is next wound in large hanks, which are dried so that the gums will harden and give the yarn more strength. After bleaching, dyeing, or any other necessary steps, the yarn is ready for weaving. If thread instead of cloth is to be made, several yarns are simultaneously passed through hot water and twisted together. This product is used in many industrial processes, as well as for household spools of thread and fishing reels and nets.

Perhaps this is the place to raise a question that puzzles many shoppers: how is the quality of linen measured? The best test is the fineness of the yarns used to make the finished article. This can be told partly by the feel of the cloth, with soft linens rating higher than stiffer ones. This method is difficult, however, because most unlaundered linens feel stiff to the shopper, who is more accustomed to the softness of cotton or rayon. A better test is to look at various linens through a magnifiying glass. If the yarns in two articles are the same in fineness the higher quality material is that which has the greater number of strands of yarn per square inch. Although the shopper may not be able to judge these qualities even with a magnifying glass, the mere production of such a glass usually encourages the salesman to a commendable degree of frankness.

In the linen trade the size (or fineness) of yarn is measured by the number of 300-yard hanks, or leas, contained in 1 pound. Thus, 1 pound of 70-lea yarn is 21,000 yards long. This is the highest quality yarn that most Irish flax will spin. Belgian flax now spins up to 180 leas, or 54,000 yards per pound weight. In prewar days, Belgian flax would spin more than 300 leas, or 90,000 yards of yarn per pound weight, but since the war flax of this quality has not been produced.

The process of spinning flax that has just been described differs substantially from the spinning of other yarns. However, the weaving of flax yarn is very similar to any other weaving operation. The warp is the series of yarns running lengthwise through the cloth. It is wound onto warp beams, which look like giant camera spools. The ends are then brought over the top of the loom and attached to a similar spool on the front. These yarns constitute the foundation of the fabric. They are crossed at right angles by other yarns that are known as the weft. The crosswise yarns (weft) go over one strand of lengthwise yarn (warp) and under the next. In practice, of course, the weft yarns are shot across the back of the loom in a shuttle and do not actually weave up and down through the warp. Instead, half of the warp strands are raised for one passage of the shuttle so that it passes over the lowered half of the strands and under the raised half. After the shuttle is at the other side, the yarn is pushed into place. The lengthwise strands then alter position so that the lowered half is raised and vice versa. The shuttle is returned and the weft yarn is again jammed into place. All of this happens very quickly and appears to be a continuous operation. The result of this simplest type of weaving would be a plain fabric such as a tea towel.

The weaving of an article such as a checked breakfast cloth is similarly uncomplicated. When making up the warp, the operator inserts colored yarns at appropriate places. This produces lengthwise segments of color. The loom is started and the first shuttle contains white yarns. After the required number of passages back and forth, this shuttle is automatically replaced by another that contains colored yarns. When a colored band of the desired width has been interlaced, the white shuttle is put back into the loom.

Damask weaving appears much more complicated than either of these processes. But it is actually quite simple. The pattern in damask is obtained by varying the number of lengthwise strands that are raised before each passage of the shuttle. Instead of having exactly one-half of the strands raised and then lowered, some stay up or down for many passages. This produces a variation in the weave that makes a pattern. The number of lengthwise strands that are raised is governed by a long card punched with holes, which operates on the same principle as the piano roll used in a player piano. There is a separate series of holes for each passage of the shuttle. The strands for which holes have been punched are pulled up while the others remain down.

After the linen has been woven—whether it is fine linen or fabric for a tea towel—it has to be finished. Boiling removes from it the sizing and oil that has accumulated in the manufacturing. Bleaching—by applying chemicals or by spreading the fabric on grass—is the next step. Then the fabric is mangled or beetled to give it compactness and luster. Beetling, or pounding with large wooden blocks in a machine, is the more expensive and difficult process. It is only used for high-quality linen to give it the soft, silky finish that makes fine Irish linen so desirable. Finally, the linen is ironed, under pressure between rollers, and ready for the market. Whenever the fabric is to be dyed or printed, those processes, of course, precede the ironing.

We have now followed the progress of flax from its growing place in Belgium to its transformation in a Belfast factory into a tea towel, a breakfast cloth, or a damask tablecloth. Hard work and superior craftsmanship have gone into each stage of its progress—growing, pulling, retting, scutching, spinning, and weaving. This careful workmanship by Belgians and Irish has produced a fabric of such excellence that its position on the world market is as enviable now as it was in the days of our great-grandparents.



Sometimes Irish linen is spread on grass for bleaching; more often, it is bleached by a chemical process.

Recent Changes in Yugoslav Agricultural Policy

By THOMAS M. VENABLES and PAULINE McD. MICHAEL

Yugoslavia's economic system has undergone many changes during the past year. Of special importance to agriculture have been policy changes dealing with rationing, marketing, prices, and the announced plan for a reappraisal of collective farms and general cooperative organizations. Less direct in their influence on farming are the decentralization of the government's administrative functions and the recent currency devaluation.

Foremost among the factors responsible for shifts in agricultural policy was failure of the Five-Year Plan for agriculture and industry. This plan, originally for the period 1947-51, but extended in 1950 through 1952, was far too optimistic to be realized. The break with the Cominform in 1948—the first important postwar change in the country's political and economic course—provided the government with an opportunity to adjust economic policies and programs along Yugoslav "socialistic" lines while rejecting unwanted portions of the Soviet Union's doctrines.

At the same time, separation from the Soviet Bloc made necessary a difficult reorientation of trade. The direction no doubt would have, through necessity, shifted to the West in time but the shift was precipitated by the severe drought of 1950. The resulting food assistance program, carried on largely by the United States, brought Yugoslavia into closer economic contact with the West than it had been since the end of World War II.

The Yugoslav Government soon learned that if it was to continue to do business with the West it must establish economic stability and financial responsibility at home and abroad. The past months have been critical ones, marked by efforts to attain a balance between domestic and world prices. The manifestations of these efforts have been a mass of laws, decrees, and pronouncements, often creating confusion and implying a lack of coordination within the government. But they also indicate the ability of the government to change course abruptly to reach a desired end. It is important to bear in mind, however, that the willingness to change direction does not mean abandonment of the ultimate goal of establishing a "socialist" state.

Food Rationing

From early in 1946 until the fall of 1951, when food rationing was discontinued, an average of more than 5,200,000 Yugoslavs held ration cards that permitted them to make periodic purchases of specified quantities of meat, lard, bread, sugar, and often other commodities when they were available. Rations varied according to the category in which the consumer was placed. Sometimes the number of categories reached as many as 18, including several classes of laborers, government and public utility employees, students, pensioners, and others.

In May 1951, meat was derationed. All consumers who had been entitled to meat rations were given cash coupons, or food scrips, entitling them to buy meat—or other foodstuffs in case meat was not available—at an 80-percent reduction in price.[1]

All remaining food rationing was discontinued on October 1, 1951, and the provision applying to derationing of meat in May was extended to cover the newly derationed commodities—persons holding ration cards were given a number of food coupons or scrips (the number depending on the former ration category) entitling them to the 80-percent reduction. These consumers also received certain allowances of industrial scrip permitting the purchase of industrial products at an 80-percent reduction in price. All formerly rationed food was sold in the state stores at controlled prices which were lower than those asked by individual peasants but higher than under rationing.

It had been announced in September that a general wage increase was planned to compensate

[1] See "Yugoslavia's New Farm Marketing Scheme," *Foreign Agriculture*, p. 175, August 1951.

for the increase in prices. In the meantime the coupons were distributed as a stop-gap measure. Then during October the government announced that the wage increase had been postponed, pointing out that such a measure would have to wait until a balance could be achieved between the prices of industrial and farm products and between domestic and foreign prices.

A decree, dated October 26, effective November 1, abolished the 80-percent-reduction food scrips and substituted for them cash allowances of equal value (in addition to wages and industrial scrip). In general, allowances were received only by government officials and employees, workers in the nationalized industries, pensioners supported by the state, war invalids, etc., making fewer people eligible for assistance than under either the rationing or food-scrip system. The purchasing power of many families without children declined sharply as wives who did not work for the state and who in October had received food and industrial coupons were denied further benefits. Families of state workers with children benefited, however, because increased allowances were authorized for their children.

Private employers were obliged to increase wages to compensate for the abolished food coupons and allowances that their employees had previously received. Many private, and some quasi-state—industrial, employers failed to comply on economic grounds. In addition, some employers discharged heads of large families and engaged single persons to replace them. Persons not employed and those practicing free professions were not entitled to the cash.

Price and Wage Policy

Since 1945 Yugoslavia has had inflation. When the present government came into power, it began to channel investment and imports into expanding the output of producers' rather than consumers' goods. Employment was high (though labor was not always efficiently employed) but the output of consumers' goods was low. Wage earners had few alternatives for spending even their meager incomes. Therefore they bid up prices and set in motion a price spiral that made the wage increase—promised in September—seem necessary. As mentioned above, in the next month the government suddenly announced its reversal of the wage and price policy and began stressing deflationary rather than inflationary measures.

Several steps were taken in addition to the shelving of plans to increase wages. Two of the most important were the sharp increase in the costs of services and the decrease in the prices of many commodities.

In October and November the Ministry of Trade arbitrarily increased the cost of transportation, public utilities, postal rates, and other services by as much as 300 percent. It was claimed that commodity prices had increased 16 times over prewar levels, while those for public services had increased less than 2 times. The increased cost of services left less money available for foodstuffs and other goods. Thus a forced reduction in purchasing power was expected to pave the way for lower prices and, we may add, lower consumption.

On April 5, 1952, the Economic Council decreed that state workers were to receive 27 percent of their wages in industrial scrip. The allowances for other recipients such as state pensioners, war invalids, etc., were to remain unchanged. As of May 15, 1952, the cash compensation in lieu of food coupons was discontinued for state workers, while pensioners, war invalids, etc., continue to receive them.

To go back to the fall of 1951—in October and again in November, the government reduced the price of textiles; the price of tobacco products was likewise reduced in October. In November, state-controlled shops announced the following additional price reductions: Lard and oils, from 270 to 200 dinars per kilogram ($2.45 to $1.81 per pound); margarine, from 240 to 170 ($2.18 to $1.54); crystal sugar, from 175 to 155 ($1.59 to $1.41); and powdered eggs, from 380 to 300 dinars per kilogram ($3.45 to $2.70 per pound).[2] When rationing had come to an end on October 1, food prices had risen sharply above the former free or open-market prices but had soon declined under the impact of the new policies to the levels established by the state stores.

On December 28 the government announced that,

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[2] Converted at 1951 Yugoslav legal rate of 50 dinars to $1.

effective January 1, 1952, the currency would be devalued. The new exchange rate of the dinar (300 to $1 compared to the former Yugoslav legal rate of 50 to $1) was fixed in agreement with the International Monetary Fund. The exchange rate is now more realistic in relation to the currencies of other countries.

Marketing Policies

Since 1945 peasants have been required to deliver specific quantities of farm products to the state. Delivery quotas have been high. Often they have been established before sowing time and levied according to the area of arable land, even in the case of certain livestock and livestock products, and have thus been independent of the size of the crops. Nevertheless, the peasant occasionally has had small surpluses of products that he could sell on the free market. And sometimes he has had products to sell that were not under the mandatory delivery program. For several years the government has criticized the independent farmer for making "exhorbitant profits" from these open-market sales and has sought ways to induce him to deliver these extra products to the state. In the past the government has offered bonuses for deliveries of farm products in excess of assigned quotas. These incentives have taken the form of higher cash payments and additional coupons that entitled the peasant to make purchases of manufactured products at reduced prices or of farm requisites, such as fertilizers and spraying materials. The cash incentive has been the most effective, because a "right to purchase" is of little value if the goods are not available, as has often been the case.

On the list of compulsorily delivered commodities until June 7, 1952, were all grains except rice, wool, and industrial crops.[3] But with the abolition of compulsory deliveries of milk, potatoes, legumes (beans, peas, and lentils), hay, and straw in May 1951, of meat in July, fats in October, and rice early in 1952, the independent farmer appeared to have a little more marketing freedom than before.

The government relaxed compulsory deliveries of these products and discontinued rationing in the belief that the production of state farms plus its collections from independent producers and collectives and its control over imports would be sufficient to regulate prices in the market. In addition the government relied on higher freight rates and its control over railroad freight traffic, as well as on punitive action against middlemen (so-called speculators), to channel peasants' marketings into the controlled outlets. Subsequent operations showed these measures to be effective, except during the months when a particular product is out of season and therefore in short supply.

Then on June 7, 1952, compulsory deliveries of all cereals were abolished, leaving only wool subject to state collections. As yet it is too early to know the results of this move; however, the government probably expects that increased quantities of farm products will be brought to market by farmers, causing a further fall in prices. This in turn will increase the economic pressure on the independent peasant to produce and sell even larger quantities. Also, disproportionately high taxes have been designed to force him to sell more on the market. In the spring of 1951, prices of basic home needs were set at artificially high levels. In theory, the peasant was expected to deliver more produce in order to get tobacco, kerosene, matches, salt, etc., that he required. In practice, it is reported that he merely "tightened his belt."

Early in the summer of 1951—even before rationing was abolished—the state began to lower prices of farm products it sold in the open market. This state competition forced the independent peasant to take lower prices for his produce. At the same time, he was paying more for the things he had to buy than were members of collectives.

Despite the government's price deflating activities, the independent peasant has had more freedom in marketing as products have been removed from compulsory deliveries. As will be seen later, however, it is becoming increasingly difficult for him to retain his independence. An important factor that endangers his freedom is that the purchasing and marketing cooperatives, which have long been an important feature of Yugoslav peasant life, are rapidly being drawn into the collectives.

Collectivization and Cooperative Policy

General cooperatives in Yugoslavia were before the war the traditional type of purchasing, marketing, and credit organization with which United States farmers are familiar. They were in no way similar to the present collectives—known as Peas-

[3] Industrial crops are grown under special contract.

ants' Work Cooperatives (PWC). The PWC were set up in the first basic law pertaining to cooperatives (July 1946) that the Communists passed on coming to power. This law and especially the greatly strengthened one that followed in May 1949 provided for the Soviet type of "cooperative" (collective farm) and took the steps necessary for the eventual evolution of the traditional general cooperative to the "higher form," or Peasants' Work Cooperative. This legislation provided that members could join their holdings for crop production as well as unite for processing, savings, and credit.

During its first years in power, the government emphasized the organization of the Peasants' Work Cooperatives. Growing slowly at first, the number increased rapidly during a concentrated drive in 1948-49. The pressure exerted in speeding up the development of the PWC had repercussions, however. Early in 1950 Premier Tito stated that some of the Communist leaders had not always respected the voluntary principle in recruiting members for the PWC and indicated that, henceforth, the government would concentrate on consolidating and strengthening existing PWC rather than on forming new ones. During the year the increases in number, membership, and area of arable land in the PWC were insignificant compared with those of 1949. At the end of 1950 there were 6,990 PWC with 415,000 members, or 18 percent of the agricultural households, and 5,475,000 acres, or about 22 percent of the arable land. During 1951 additional favors, including exemption from paying major debts, were granted collectives. But even such preferential treatment did not induce peasants to join; instead many old members were making determined efforts to withdraw their membership.

These members, like all peasants who joined a Peasants' Work Cooperative, signed a contract agreeing to remain a member for a minimum of 3 years. Most were of the belief that they could withdraw their membership at the expiration of the 3-year period, as stipulated in the original law. The



A farmers' market in Sarajevo, Yugoslavia.

contracts of those who had joined during the first months of the vigorous membership campaign toward the end of 1948 were due to terminate at the end of 1951. In July 1951 the Yugoslav Government published a decree that established the procedure for withdrawal from the PWC and for restitution of land as implied in the original law. The instructions included in this decree were so complicated with detail that it was difficult if not impossible for the peasant to accomplish his release.

That applications for withdrawals from the PWC were numerous was evidenced by Yugoslav press reports, which also made it apparent that the applicants were meeting with little success. According to *Borba*, the official Communist Party newspaper, September 9, 1951, Premier Tito, while traveling in Croatia, said ". . . the cooperatives are of vital importance for our socialist country and in no case will we relinquish collective farming. This must be borne in mind by all those who have joined the cooperatives (PWC) and who think that after a three year period they can withdraw. . . . No one will be forced to join cooperatives, but no one will be permitted to break them up."

When collective farms were set up, they were composed of many small holdings interspersed with farms and plots belonging to nonmembers. The collectives have thus been poorly organized for efficient operation. During the past year, the government, in its drive to make them sound economic units, moved toward consolidation of the collectives' land by taking over the plots of nonmembers that are located within the territory of a collective and compensating the owners with other land. This inclosure movement is considered by independent peasants concerned as a source of danger, for they fear they will receive land inferior to that which they must give up.

The inclosure movement has, however, proceeded with halting steps, which illustrates the uncertain policies affecting agriculture. The first indication of the movement appeared in June 1951, when *Borba* published an article according to which all privately owned plots of land within the boundaries of a Peasants' Work Cooperative would be taken over by the PWC and the owners would be compensated with "equivalent" plots of land outside the collective block. According to the newspaper, the decree was soon to come into force. It was not until November 7, 1951, however, that the *Official Gazette* published the decree. But in the same issue of the *Gazette* was published a decision for the discontinuance of such procedure. On January 15, 1952, after all fall plowing and seeding had been completed, the decision allowing the resumption of consolidation of the land holdings of state farms and collectives was published. On April 1, 1952, in the Voivodina, the rich grain-producing area, consolidation was again suspended until autumn, indicating that the government was reluctant to hamper production by interrupting spring sowing or creating discontent.

Although in January 1951 Premier Tito reaffirmed the government's continued support and encouragement of Peasants' Work Cooperatives, on March 31 the Prime Minister of Croatia, Vladimir Bakaric, made the strongest official statement of the faults of the PWC. He called attention to their inefficiency, their bureaucracy, and their poor production records, and blamed responsible officials for following the Soviet line too closely.

Throughout the latter half of 1951, the speeches of high Yugoslav officials criticized the collectives, presaging coming changes. During November the Central Union of Agricultural Cooperatives held its annual 1951 meeting in Zagreb. On November 25, shortly after the meeting, *Borba* published a directive of the Central Committee of the Communist Party that embodied the policy discussions of the meeting, which were in effect a new cooperative policy. That policy stresses the following points:

1. A survey of all collectives will be conducted in order to eliminate all but the actually or potentially profitable ones. Lands at present worked by collectives that are unprofitable because of location or soil deficiencies, e.g., ". . . scattered and rocky areas of Herzegovina and Montenegro . . ." should be left (or returned) to individual husbandry. No new collectives can be organized and registered before an economic justification based on a detailed analysis of production possibilities under local conditions has been made and approved.

2. Many existing collective farms are to be reorganized. They will be placed on a strict profit and loss basis, with profitableness being the principal measure of success. Peasant members will be paid wages according to the type of work they perform. Members will, therefore, be required to buy their food from the farm at prevailing market

prices instead of being paid primarily in kind as in the past. Farm managers, bookkeepers, and other functionaries who do not work on the land will be paid salaries and will no longer receive perquisites from the farm.

3. All collectives have a cooperative assembly that is made up of all members. The assembly elects an executive committee through which it hires and discharges the farm manager and other employees. In theory, the committee determines the operational policy of the farm; in practice, policy is handed down from the state and the Party. The cooperative assembly will now establish the basic wage scales for the various kinds of work, part of which must be paid regularly throughout the year. (Previously the produce was distributed after the harvest.) After the expenses of the collective, including basic wages, have been met, the members will share in part of the net income of the collective in proportion to their basic wages, while the other part of the net income will be divided among various investments and social funds of the PWC. Additional remuneration for exceeding planned targets will be also paid. Social security benefits similar to those given industrial laborers will be made available to members.

4. The campaign against the village rich is to continue. Progressive taxation will be sharpened as regards remaining rich peasants—i.e., those owning 10 hectares (approximately 25 acres) or more of fertile land or less than that amount in the rich plains area. Future land sales, inheritances, or land partitioning will be subject to heavier taxes than heretofore; attempts to flout the law will be punished up to confiscation of land, particularly when it is in the hands of rich peasants.[4] (This means that the peasant must make an effort to produce more in order to pay his taxes. Even if he accomplishes this, it will be very difficult for him to exist outside the collective system.)

5. In the past the role of general cooperatives was misunderstood and underestimated, and their economic activities curtailed. These cooperatives (in which virtually all peasants hold membership) are expected to provide the basic method of broadening collective farming. They will be expected to reinvest their profits in transportation and productive equipment including trucks, tractors, processing plants, and even livestock farms.

The last two policy recommendations of the Communist Party will be the most significant from the point of view of their effect on the independent peasant and agriculture in general. If the power to tax implies the power to destroy, the peasant stands in imminent danger of being forced to give up his farm. At the assembly of the Central Union of Agricultural Cooperatives, Boris Kidric, President of the Federal Economic Council, in speaking of the collectives, said that the time would come when the rich peasants would be sorry to be outside the collectives and would want to join them. He referred also to the taxation policy and indicated how the rich peasant would be made to bear the greatest burden.

According to the Party directive, Party organizers are exhorted to "set themselves to systematic socialist transformation of our agriculture and our villages . . . which is a vital condition for the further socialist building of our country." The directive and the speeches made by Kidric and others at the assembly indicate that general agricultural cooperatives will be considered the main cog in the machinery for further socialization of the villages. Emphasis has been shifted to the development of this "lower form" of cooperative until it evolves into the "higher type." What method will be used to accomplish this evolution is not yet clear. General cooperatives are encouraged to increase their common holdings by taking over deserted or confiscated tracts of land and by rental or purchase.

Since 97 percent of all peasants reportedly belong to some type of general cooperative, it is difficult to see how the individual peasant will be able to resist being caught in the current and carried down the stream to socialization. Ironically, his traditional cooperative, or *zadruga,* is being used as the means of transportation to carry him along. With agricultural machinery available only to cooperatives, collectives, and state farms, with higher taxes and higher prices to pay for consumer goods, the individual peasant will have an increasingly difficult time resisting collectivization. But if he wishes to resist it and if there is a way, he will discover it.

[4] A tax law was passed in December 1951. The law exempts wages earned in state and collective farms, but the individual peasant is taxed on the income derived from the "highest potential utilization of the land." Special surveys were made before the law's implementation in order to determine the maximum production of the land.

FAO Council Session

By THOMAS E. STREET

Two actions of the Council of the Food and Agriculture Organizations of the United Nations, in its June 9-14 session held in Rome, were of particular interest. One was the statement by the United States representative, Assistant Secretary of Agriculture Knox T. Hutchinson, on the need for immediate action to increase food and agricultural production. The other was the Council's discussion of a proposed reserve for famine emergencies.

These actions were among a number taken by the representatives of 18 countries that are members of the Council of FAO. The Council meets at intervals, ordinarily twice a year, between the biennial conferences of the full 68 country membership of FAO.

Assistant Secretary Hutchinson's statement was brief but forceful. It was a message from Charles F. Brannan, Secretary of Agriculture, and included a statement from Harry S. Truman, President of the United States. Especially significant parts of the message were:

"Secretary Brannan has asked that I call the attention of the Council to the pledge made by the 68 Member Governments at that Conference [the last session of the Conference of FAO, November 1951] to maximize their efforts in food production and conservation to the end that food production will increase at a greater rate than population growth over the next five years.

"You will recall that in the Conference resolution member countries agreed to prepare and carry out agricultural development plans to achieve the objective of increased production, and that these plans, and progress under them, are to be reviewed at regional meetings in the spring of 1953. However, as we all know, in many parts of the world the planning, planting and even harvesting and storing of next year's crop will have been completed before these regional meetings can be held.

"Therefore, Secretary Brannan asks me to remind this Council that any effective effort to produce the food and agricultural products so greatly needed to provide for the world's rapidly increasing population must begin *now*.

"The Government of the United States is mobilizing all available resources in this great campaign. I am authorized by the President of the United States to report to you that he has instructed all United States Agencies dealing with our technical cooperation programs on food production and conservation to cooperate fully with FAO and to give maximum support to cooperating governments. We hope that through cooperative efforts of all member countries of FAO a great forward step will be made toward meeting the pledge to increase the world's food supply in 1953."

The Council's discussion on an emergency food reserve was largely exploratory. The suggestions of the FAO staff in a document prepared for the meeting had been available only a short time prior to the meeting. Also the problem is exceptionally complex and requires a great deal of study. The idea for an emergency food reserve was put forward by the Government of India at the last session of the Conference of FAO in November 1951. The Conference resolved that FAO's Council should study ways and means whereby an emergency food reserve could be established and made available for member countries threatened or affected by serious food shortages or famine.

The emergency food reserve proposal was examined in the context of general discussions that have taken place in FAO's Conference and in the UN's General Assembly and Economic and Social Council on how to deal with famines. As a result of these general discussions, FAO was asked to keep a close watch on food shortages and the development of famines, to report on the extent of international assistance needed, and to call meetings of governments to work out ways of giving assistance through governments and voluntary agencies. FAO's Director-General is to report on these actions to the Secretary-General of the UN, who will arrange for coordination of famine emergency relief activities of governments, international organizations, and voluntary agencies, if required.

The emergency food reserve proposal taken up at FAO's Council was thus a separate, though related, part of the general problem of famine relief. As a basis for the discussion at the Council, the FAO staff had worked up a "yardstick unit" that they called

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an emergency food reserve unit, which was soon shortened to EFRU. EFRU was defined as the quantity of food required to supplement at the rate of 1,200 calories per day the diet of 1 million people for 1 month. The FAO staff said that EFRU was to be regarded as nothing more than a yardstick for calculating the possible composition of a reserve and for estimating the amount of assistance needed and the cost. The staff suggested that an EFRU might be made up of grain, beans, dried skim milk, fats, and sugar in quantities that would total about 10,000 metric tons and cost about $1,655,000.

The FAO paper presented to the Council suggested three possible alternatives for managing an emergency food reserve: (1) international ownership of the reserve, (2) an international relief fund for buying emergency supplies, or (3) nationally owned stocks with pledges by governments to deliver stocks as required. In its document, the FAO staff discussed the pros and cons of the various alternatives, the problems of administration under each of the alternatives, and questions of whether contributions to the reserve would be in the form of gifts or whether there should be provision for repayment.

In view of the complexities of the proposal as outlined in the FAO staff paper and in view of the shortness of time to consider and discuss the problem, it is small wonder that the Council did not reach any conclusions. While all members expressed great sympathy with the basic aim of relief of famine and appreciation for the imaginative suggestions of the FAO staff, they felt that they were not able at this meeting to reach a decision on the proposal. The discussions of this subject in the Committee on Commodity Problems, which met the week before the Council session, and in the Council itself indicated the need for thorough study of all the ramifications of the proposal by people with wide knowledge of the practical problems that abound in such a project.

In addition to the questions raised in the FAO paper on ownership, financing, and administration, questions were raised by representatives of governments at the meetings of the Committee on Commodity Problems and of the Council. Such questions as how to define a famine emergency for the purposes of the reserve, whether the relief should be restricted to famines arising from natural causes such as drought, what degrees of seriousness of famine would justify international action, how to distinguish between emergency situations and chronic undernourishment, whether famines come so suddenly as to justify the need for an international reserve or whether there is sufficient advance warning so that other forms of action could deal with the situation, whether physical shortage of supplies is really a factor in famines or whether other factors such as lack of organization, transportation, or purchasing power are not the real difficulties, whether it is wise to hold food off the market currently in the face of chronic undernourishment in order to provide for future famines—all of these were raised, in addition to the operating problems of where to locate stocks, what kinds of stocks, how to manage stocks, transport them, etc.

Therefore, after a lengthy discussion the Council decided that a working party of five experts should be appointed to consider these questions. The experts are to be nominated by governments of two exporting countries, two importing countries, and one country interested in both exports and imports. FAO's Director-General Norris E. Dodd is to select the governments to be represented. The experts will operate in an individual capacity, in that they will not be under instructions from their governments, but they will nonetheless be in close touch with their governments. Their report will be submitted to the next session of FAO's Council, which will meet in Rome November 17, 1952.

In addition to these discussions on the need to increase food and agricultural production and on the food reserve, the Council (with the aid of a competent survey prepared by FAO's staff) performed one of its principal regular functions—that of keeping the world food and agriculture situation under review. Highlights of the staff survey were (1) that world food and agricultural production had increased 2 percent during the past year and (2) that production of nonfood crops had increased more rapidly than had output of food crops.

The Council considered the progress of FAO's program of increasing agricultural production, technical assistance, desert locust control, and reform of agrarian structures. It dedicated FAO's new David Lubin memorial library. And it adopted a new set of regulations governing the management of FAO's staff, reviewed the organization's financial position, and made an adjustment in staff salaries to compensate for increased cost of living. It also discussed increasing the present membership of the Council and changes in election methods.

Teakwood in Thailand





The old ways and the new, the East and the West, are combined in the logging operations in Thailand's teak forests.

The forests of northern Thailand yield a wood that in the world marketplace is surpassed in value only by mahogany. That wood is teak—durable, straight-grained, and easily worked. Teakwood is Thailand's second most important export product, valued in recent years at around $15 million a year.

To the Westerner, teak lumbering is an exotic industry, for much of the work is done by elephants. They drag the great teak logs—some of them more than 100 feet long and 25 feet in circumference—out of the forests, down the precipitous mountainsides to the edge of the cutting area. Working in groups, elephants arrange the logs in piles, which are hoisted onto trucks that move them to a convenient rafting point. From this riverside stockpile, elephants push the logs into the water.

When the rains come and the river is high, the logs are fastened together and floated to the sawmills at Bangkok, where they are made into lumber for houses, furniture, and ships.



The holes cut in the ends of teak logs are used for attaching elephant trace chains.



When high water comes with the rainy season, these teak logs will be made into rafts and floated to Bangkok.

Ireland's New Export Meat Trade*

by GEORGE J. DIETZ

Ireland's meat export trade is only 2 years old but it is already earning twice as many dollars as all other exports combined and as much besides in sterling. The volume of fresh and frozen beef exports to new and growing markets increased by almost 300 percent during 1951. This new turn in the Irish cattle industry did not, however, reach such proportions as to curtail the traditional movement of live cattle to the United Kingdom. But it was forcing an examination of the merits of these "on the hoof" exports. In past years the Irish economy was based on a coal-cattle trade with the British. The new processed and fresh meat export trade solves the problem of alternate markets and diverts returns from cattle byproducts to domestic industries.

Some 20 years ago a single frozen-meat factory was established in Ireland to initiate a frozen meat (primarily beef) export trade. The plan was premature and failed, but today throughout the 26 counties of Ireland cold storage plants are being built. Many are patterned to follow Chicago's killing and dressing methods.

Ireland's trade in meat with the dollar area started late in 1950 and developed rapidly. The increase in fresh and frozen beef exports to all destinations from 6,400 tons—worth £964,403 [1]—in 1950 to 16,286 tons—worth £4,045,344—in 1951 has caused no little excitement among traders. In April of 1950 there were half a dozen optimistic exporters; today there are more than 80. Exports to the important United States market during 1951 reached 13,240,000 pounds. This volume, although small when compared with the daily United States meat consumption estimate of roughly 60 million pounds, was a significant dollar earner (more than $5 million) for the Irish and the source of notable good will. Other buyers of frozen meat were the United Kingdom, Canada, Spain, Belgium, and Western Germany. In addition, 4 million pounds of meat were contracted for to supply American troops in Germany.

Because of the absence of foot-and-mouth disease in Ireland and inasmuch as Irish veterinary regulations have the approval of the United States De-



Cattle market in Galway, Ireland. Irish cattlemen still value the United Kingdom market for their live cattle, but more and more of the animals are being exported as fresh meat.

*Based in part on reports by Elizabeth C. Bouch, Assistant Attaché, American Embassy, Dublin.

[1] An Irish pound is equivalent to $2.80.

partment of Agriculture, chilled or frozen beef is permitted to enter the United States. As a partial test of these regulations, Ireland was kept free of foot-and-mouth disease during the past winter when outbreaks of epidemic proportions swept Europe from Italy to Sweden. The United Kingdom also suffered a higher incidence of the disease during this period. With the outbreak of foot-and-mouth disease in Canada last February, Ireland is currently the largest supplier of refrigerated meat to the United States.

Beef is transported from Ireland to the United States and other destinations in four forms: fresh, chilled, frozen, and manufactured. For chilled quality, cattle are usually slaughtered 24 hours before shipment, chilled to a temperature of 32° F., and hung in the ship's hold. Transport of chilled beef is a delicate operation and extreme care must be exercised in handling the carcasses. This type of beef is preferred by the United States market and commands a premium. Because of the danger of deterioration, the risk is not small, but the prices obtained are good. It is estimated that beef exported to the United States brings approximately twice the price of consignments to Britain. Accordingly, good prices for Irish beef in the United States and continental countries may help to place Ireland in a stronger bargaining position with Britain when beef prices for export to that market are again being reviewed.

TABLE 1.—*Irish meat exports, 1951*

Destination	Quantity (Long tons)	Value (Pounds)[1]
	FRESH OR CHILLED BEEF AND VEAL	
Britain	6,276.5	1,029,514
Italy	225.4	42,692
France	237.4	48,030
Switzerland	25.0	4,980
Total	6,764.3	1,125,216
	FROZEN MEAT	
Britain	193.0	58,493
Sweden	449.9	66,996
United States	5,910.7	2,014,235
Canada	548.6	165,939
Burma	1.5	535
France	10.1	2,096
Western Germany	986.6	288,244
Belgium	520.7	117,938
Spain	900.0	205,500
Total	9,521.1	2,919,976
Grand total	16,285.8	4,045,344

[1] An Irish pound equals $2.80.
Source: *Chamber of Commerce Journal*, March 1952, Dublin.

Frozen beef is lowered to around 14° F. and packed in flat wooden cases for export. The margin of profit for this type of shipment is roughly 10 percent, compared with around 20 percent for chilled. Irish frozen and chilled beef have generally been well-accepted by the United States trade. Quality is reported to be exceptionally good, grading out "good" or "choice" by United States Department of Agriculture standards. Inasmuch as there is little corn fattening in Ireland, most stock are finished on grass. The marbling of the meat is satisfactory, but the texture is reported to be somewhat coarse when compared with domestic American beef. This difference may be due to the fact that Irish steers are generally slaughtered at 4 years of age. Quarters of beef are very uniform and wrapping, boxing, and general handling are exceptional.

Although minor quantities of manufactured beef were moved to the United States during 1951, the outlook for a substantial increase during coming years is favorable, barring unforeseen difficulties. During the war most of the processed beef that Ireland sold to Britain was canned, but, according to Irish sources, canning for the British market is now uneconomic for Ireland. Consequently, export of this line has been sharply curtailed during the past 2 years. There is currently a special interest in developing outlets for canned Irish stew in New York, Philadelphia, Boston, Chicago, and other United States cities. As there is little demand for manufactured beef in the Irish market, a surplus of this type of meat exists.

Cold storage and shipping continue to present difficulties. Storage facilities are being expanded rapidly, despite a shortage of capital, but chartering suitable ships is costly and sometimes unreliable. Informed sources indicate that a fleet of refrigerated ships can be kept busy when the trade is fully developed. Transportation of the beef to ports of embarkation is also a problem because of the scarcity of refrigerated trucks.

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Although the Irish are enthusiastically going ahead with plans to expand operations and although the immediate trend would appear to stress cattle production and trade in beef, caution is advised by some officials of the Irish Government and private industry, who contend that the long-term trend will depend on the degree and kind of interest shown in Irish meat production by the British Food Ministry. The current United States market is a dollar earner and consequently of great interest to Ireland, but the British market is held by some to be the logical outlet for the bulk of the exportable meat surplus. In addition, the proximity of Ireland to sources of foot-and-mouth disease should be a conditioning factor. A single outbreak at any time in Ireland would take away the American market for at least a year because of United States sanitary regulations. Another deterrent to rapid expansion is the current increase in American cattle inventories plus a possible sustained decline in beef prices in the United States, thus narrowing the margin between Irish and American prices.

It is significant, however, that Ireland is well under way in the export movement of beef at a time when other important livestock countries such as the Netherlands and Denmark are only beginning to explore the possibility of placing more emphasis on the production of beef for export.



Irish exports of fresh and chilled beef to the United States make up only a small part of the daily meat consumption in this country but they are important dollar earners for Ireland.



From Oxcart to Tractor in El Salvador

By E. WILLIAM RANCK

El Salvador, the smallest of the American Republics, seems about to move from the oxcart into the tractor age in one Paul Bunyan leap. The ox-drawn wooden plow of Egypt is still the most widely used implement, next to the machete, but the Salvadoran-United States Agricultural Station, Centro Nacional de Agronomía, has interested hundreds of farmers and government officials in tractor-drawn equipment by demonstrating what it can do to speed farm work, improve seedbeds, and increase yields.

El Salvador's able and progressive Ministry of Agriculture, wishing to get mechanization started quickly, formed a Department of Mechanization and gave it funds. The Department already has purchased more than $350,000 worth of tractors and equipment—ranging from two-plow outfits to D-7 Caterpillars, from disk plows to combines. All were purchased in the United States and paid for by El Salvador, which incidentally operates "in the black."

To get things started the Department of Mechanization has been plowing the land and charging for the service by the manzana, which is the local unit of land area. Other types of tractor work have been done on the same basis. In this way the government hopes to earn enough to pay the expenses of the work. Not only the large operator benefits from the program; the small farmer too can have his fields plowed and prepared, provided he and his neighbors have enough work to make it worth while to send them equipment and a tractor operator.

The Centro, from the beginning, has cooperated in this program with information and suggestions. It helped set up the field organization and the plan for the new 28-building repair base at Matazano. Here, tractors that are being rebuilt will flow through the well-equipped plant in near-Detroit fashion.

Naturally the government does not plan to stay in this business longer than necessary. Salvadorans believe in encouraging private initiative. The hope is that, once the trail is blazed, mechanization will gain favor and more and more farmers will modernize their operations to the improvement of their own standards of living and that of all Salvadorans.

Making machines work well requires mechanically minded, trained personnel. A mozo cannot drop his ox goad, mount a tractor, and drive off. The Centro already has held two schools for tractor operators and mechanics. More will follow. It is expected that many of these graduates will soor be operating the new equipment.

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U. S. DEPARTMENT OF AGRICULTURE NEG. 1894 OFFICE OF FOREIGN AGRICULTURAL RELATIONS

East and West Flanders and the Walloon provinces are Belgium's principal flax producing areas.

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